

AMENDMENTS TO THE CLAIMS

Claims 1-18 (cancelled).

Claim 19. (Currently Amended) A method of preparing a gel delivery system comprising gel particles for topical application of at least one active agent, said method comprising:

a) forming a hot an aqueous solution of a polymeric gelling agent, said aqueous solution being maintained at a first temperature above the gelling point of said polymeric gelling agent, the solution being gellable at a lower temperature below the solution temperature, said solution forming a gelling solution, said gelling agent solution having dispersed therein said at least one active agent and a restraining polymer;

b) discharging the hot-gelling agent solution through a discharge orifice into a cold-moving stream of hydrophobic liquid and forming droplets of said gelling agent solution, said hydrophobic liquid being at a second temperature below the gelling point of said gelling agent solution, the cold-hydrophobic liquid being immiscible with the gelling agent solution and being at a temperature below the gelling agent gelling point;

wherein the gel particles coalesce from the gelling agent solution in the cold hydrophobic liquid stream through the gelling of said droplets, and wherein the restraining polymer has sufficient molecular weight to prevent egress of the restraining polymer from the gel particles, and wherein said restraining polymer is bonded to the at least one active agent in the gelling agent solution so as to retain the at least one active agent in the gel particles.

Claim 20. (Previously Presented) A method according to claim 19 wherein the cold hydrophobic liquid stream is contained in a conduit, the discharge orifice is located in the conduit and wherein the cold hydrophobic liquid stream moves past the discharge orifice and exerts a force on hot solution in the discharge orifice, the force acting to withdraw the hot solution from the discharge orifice.

Claim 21. (Previously Presented) A method according to claim 19 comprising discharging the hot gelling agent through an injection tube, the injection tube terminating in the discharge orifice wherein the discharge orifice is positioned in the moving stream of cold hydrophobic liquid.

Claim 22. (Previously Presented) A method according to claim 21 comprising containing the cold hydrophobic liquid stream in a conduit wherein the liquid stream flows through the conduit and wherein the injection tube extends into the conduit.

Claim 23. (Previously Presented) A method according to claim 22 wherein the conduit has a rectilinear portion and the injection tube extends approximately perpendicularly into the rectilinear portion of the conduit.

Claim 24. (Previously Presented) A method according to claim 22 wherein the conduit has a cross-sectional area of from about 4 to about 100 times the cross-sectional area of the injection tube, optionally at least 25 times.

Claim 25. (Previously Presented) A method according to claim 22 wherein the ratio of the flow rate of the hot gelling agent solution to the flow rate of the cold hydrophobic liquid is between about 1:2 and 1: 50.

Claim 26. (Previously Presented) A method according to claim 22 wherein the injection tube has an internal diameter of from about 0.05 to about 10 mm.

Claim 27. (Previously Presented) A method according to claim 22 wherein the conduit has a cross-sectional area of from about 4 to about 400 times the cross-sectional area of the injection tube, the ratio of the flow rate of the hot gelling agent solution to the flow rate of the cold hydrophobic liquid is between about 1:2 and 1: 50 and the injection tube has an internal diameter of from about 0.05 to about 10 mm.

Claim 28. (Previously Presented) A method according to claim 22 comprising cooling the hydrophobic liquid upstream of the discharge orifice.

Claim 29. (Previously Presented) A method according to claim 28 comprising separating the gel particles from the hydrophobic liquid and recirculating the hydrophobic liquid to the discharge orifice.

Claim 30. (Previously Presented) A method according to claim 19 wherein the cold hydrophobic liquid stream is contained in a conduit, the hot gelling agent is discharged through an injection tube and the injection tube terminates in the discharge orifice, the discharge orifice being located in the conduit and wherein the cold hydrophobic liquid stream moves past the discharge orifice and exerts a force on hot solution in the discharge orifice, the force acting to withdraw the hot solution from the discharge orifice.

Claim 31. (Previously Presented) A method according to claim 30 wherein the gel particles are capable of being manually crushed and applied topically by an end user.

Claim 32. (Previously Presented) A method according to claim 30 wherein the gelling agent comprises a pH stable water-soluble polymer optionally selected from the group consisting of synthetic polymers, vinyl polymers and copolymers, acrylamide polymers and copolymers, natural polymers, polysaccharides, proteins, synthetically modified polysaccharides, synthetically modified proteins, botanically derived gels and carbopol.

Claim 33. (Cancelled)

Claim 34. (Cancelled)

Claim 35. (Cancelled)

Claim 36. (Cancelled)

Claim 37. (Previously Presented) A method according to claim 19 comprising pumping the hot gelling agent solution from a heated vessel containing a bulk supply of the hot gelling agent solution to the discharge orifice.

Claim 38. (Previously Presented) A method according to claim 37 comprising recirculating the cold hydrophobic liquid through a cooled tank.

Claim 39. (Previously Presented) A method according to claim 38 comprising recirculating a coolant between a chiller and the cooled tank to maintain a desired low temperature in the tank.

Claim 40. (Previously Presented) A method according to claim 37 comprising flowing the hydrophobic liquid containing gel particles over a screen to separate the gel particles from the hydrophobic liquid.

Claim 41. (Previously Presented) A method according to claim 19 comprising pumping the hot gelling agent solution from a heated vessel containing a bulk supply of the hot gelling agent solution to the discharge orifice, recirculating the cold hydrophobic liquid through a cooled tank, recirculating a coolant between a chiller and the cooled tank to maintain a desired low temperature in the tank and flowing the hydrophobic liquid containing gel particles over a screen to separate the gel particles from the hydrophobic liquid.

Claim 42. (Previously Presented) A method according to claim 19 comprising selecting the discharge size of the discharge orifice and the velocity of the moving stream of cold hydrophobic liquid according to the desired gel particle size.

Claim 43. (Previously Presented) A method according to claim 19 wherein the flow rate of the cold hydrophobic liquid is greater than the flow rate of the gelling agent solution.

Claim 44. (Previously Presented) A method according to claim 19 comprising discharging the gelling agent solution into the cold hydrophobic liquid stream at a flow

rate of from about 2.5 to 6.2 ml/min wherein the cold hydrophobic liquid stream moves with a flow rate of from about 10 ml/min to about 300 ml/min.

Claim 45. (Previously Presented) A method according to claim 19 operated to make beads of from about 2.8 to about 4 mm diameter or from about 0.4 to about 0.7 mm diameter.

Claim 46 (Cancelled)

Claim 47. (Withdrawn)

Claim 48 (Withdrawn)

Claim 49. (Withdrawn)

Claim 50. (Withdrawn)

Claim 51. (Withdrawn)

Claim 52. (Withdrawn)

Claim 53. (Withdrawn)

Claim 54. (Withdrawn)

Claim 55. (Withdrawn)

Claim 56. (Withdrawn)

Claim 57. (Withdrawn)

Claim 58. (Withdrawn)

Claim 59. (Withdrawn)

Claim 60. (Withdrawn)

Claim 61. (Withdrawn)

Claim 62. (Withdrawn)

Claim 63 (Cancelled)

Claim 64. (Previously Presented) Gel beads produced by a method according to claim 19.

Claim 65. (Withdrawn)

Claim 66. (New) The method of claim 19, wherein the restraining polymer is ionically bonded to the at least one active agent.

Claim 67. (New) The method of claim 66, wherein said first temperature ranges from between about 70°C and about 100°C.

Claim 68. (New) The method of claim 66, wherein said second temperature is below about 30°C.

Claim 69. (New) A method of preparing a gel delivery system comprising gel particles for topical application of at least one active agent, said method comprising:

a) forming a hot aqueous solution of a polymeric gelling agent, the solution being gellable at a temperature below the solution temperature, said hot aqueous solution having a temperature ranging from between about 70°C and about 100°C; said solution forming a gelling solution, said gelling agent solution having dispersed therein said at least one active agent and a restraining polymer;

b) discharging the hot gelling agent solution through a discharge orifice into a cold moving stream of hydrophobic liquid and forming droplets of said gelling agent

solution, the cold hydrophobic liquid being immiscible with the gelling agent solution and being at a temperature below about 30°C, said temperature below the gelling agent solution gelling point;

wherein the gel particles coalesce from the gelling agent solution in the cold hydrophobic liquid stream through the gelling of said droplets, and wherein the restraining polymer has sufficient molecular weight to prevent egress of the restraining polymer from the gel particles, said restraining polymer being ionically bonded to the at least one active agent in the gelling agent solution so as to retain the at least one active agent in the gel particles.

Claim 70. (New) A gel delivery system, comprising gel particles for topical application of at least one active agent produced according to the method of claim 19.